

• • R E M A R K S • •

The Official Action of May 1, 2002 has been thoroughly studied. Accordingly, the changes presented herein for the application, considered together with the following remarks, are believed to be sufficient to place the application into condition for allowance.

By the present amendment, independent claims 1 and 9 have been changed to recite that the thermoplastic synthetic fibers are "non-fused" throughout the fabric.

Support for the change to the independent claims can be found in the description of Fig. 4 in the paragraph bridging pages 8 and 9 of applicants' specification where it is disclosed that the protuberances are formed by reorienting the component fibers of the fabric using water jet streams. Also, the statement in the paragraph bridging pages 9 and 10 that the resulting kitchen paper is relatively isotropic infers that the properties of the fabric are uniform throughout the sheet which would not be the case if portions of the fabric were fused.

It is noted that, in practice of the present invention, the embossing roller 32 shown in Fig. 3 mechanically embosses the nonwoven fabric without the use of high temperatures to melt the thermoplastic fibers.

Accordingly, it can be appreciated that the nonwoven fabric of the present invention is not fused by any melting of the thermoplastic synthetic fibers therein.

Entry of the changes to the independent claims is respectfully requested.

Claims 1-3 and 6-12 are pending in this application.

Claims 1-3 stand rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 4,100,324 to Anderson et al.

Claims 6-10 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson et al.

Claim 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson et al. in view of United States Patent No. 4,879,170 to Radwanski et al.

For the reasons set forth below, it is submitted that all the pending claims are allowable over the prior art of record and therefore, each of the outstanding prior art rejections of the claims should properly be withdrawn.

Favorable reconsideration by the Examiner is earnestly solicited.

On page 3 of the Official Action the Examiner states that:

the embossments of the Anderson fabric would form a fabric where the protuberances would correspond to the unembossed regions.

The embossed regions of Anderson et al. are embossed "either ultrasonically or at an elevated temperature" to form "bonded" areas 43 illustrated in Fig. 4

It is clear from Anderson et al. that the thermoplastic fibers are necessarily fused by the combination of heat and pressure to form the bonded areas 43 shown in Fig. 4.

Anderson et al. relies upon these fused bonded areas to improve the strength of the composite web as stated at column 6, lines 46-51.

Applicants provide a nonwoven fabric that contains thermoplastic synthetic fibers, which fibers are non-fused throughout the nonwoven fabric.

Accordingly, applicants' invention patentably distinguishes over Anderson et al.

Moreover, it is submitted that the applicants' claimed nonwoven fabric is distinguishable over Anderson et al. in that applicants' nonwoven fabric sheet has a uniform water absorbability

throughout. In contrast, it is obvious that the bonded areas 43 of Anderson et al. would necessarily have a lower water absorbability than the surrounding non-bonded areas. Water absorbability is an important property in articles such as paper towels that can be made from the nonwoven fabric of the present invention.

In rejecting claim 11, the Examiner has relied upon Radwanski et al. as teaching that:

...nonwoven fabrics may be hydroentangled on a mesh screen, forming wire or apertured plate in order to form embossments or protuberances without changing the properties such as absorbency, etc. of the fabric.

A careful review of Radwanski et al. reveals that this reference makes no mention of "embossments" or "protuberances" as the Examiner states. Moreover, Radwanski et al. does not appear to make any statement regarding any effect of a support such as a screen has on absorbency or any other property of the resulting coform material.

Accordingly, the Examiner's stated motivation for combining the teachings of Anderson et al. and Radwanski et al. is unfounded.

Radwanski et al. teaches a "nonwoven fibrous elastomeric web material" that includes an elastic component. Anderson et al. does not include an elastic component.

At column 1, line 31 through column 2, line 12, Radwanski et al. distinguishes over Anderson et al., both on the basis of the different components Anderson et al. utilizes and the resulting need for Anderson et al. to resort to embossing to increase strength.

It is submitted that Radwanski et al.'s own stated distinctions over Anderson et al. precludes the combination which the Examiner purports to be obvious. That is, by expressly distinguishing over Anderson et al. Radwanski et al. teaches against the Examiner's combination. One skilled in the art

would be lead by Radwanski et al. away from practicing the invention of Anderson et al. and therefore away from any combination of Anderson et al. and Radwanski et al.

It has not been established that Radwanski et al.'s use of a mesh screen or forming wire would be effective in Anderson et al. to form protuberances and provide the strength Anderson et al. teaches is achieved only by fusion-bonding.

It is moreover noted that Anderson et al. teaches entangling the fibers using gas streams 10 and 14 which merge as integrated stream 15 and enter nip rolls 32 and 33.

There is no provision in Anderson et al. for hydraulic entangling on a support such as a mesh screen or forming wire, even if the Examiner were to establish that such a process as taught by Radwanski et al. would be effective on, or benefit, Anderson et al.

The combination of Anderson et al. and Radwanski et al. is questionable at best.

Based upon the above distinctions between the prior art relied upon by the Examiner and the present invention, and the overall teachings of prior art, properly considered as a whole, it is respectfully submitted that the Examiner cannot rely upon the prior art as required under 35 U.S.C. §102 as anticipating applicants' claimed invention. Moreover, the Examiner cannot properly rely upon the prior art under 35 U.S.C. §103 to establish a *prima facie* case of obviousness of applicants' claimed invention.

It is, therefore, submitted that any reliance upon prior art would be improper inasmuch as the prior art does not remotely anticipate, teach, suggest or render obvious the present invention.

It is submitted that the claims, as now amended, and the discussion contained herein clearly show that the claimed invention is novel and neither anticipated nor obvious over the teachings of the prior art and the outstanding rejections of the claims should hence be withdrawn.


Therefore, reconsideration and withdrawal of the outstanding rejections of the claims and an early allowance of the claims is believed to be in order.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

If upon consideration of the above, the Examiner should feel that there remains outstanding issues in the present application that could be resolved, the Examiner is invited to contact applicants' patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 02-0385 and please credit any excess fees to such deposit account.

Respectfully submitted,


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Marked-Up Copy of the Claims
As Amended on August 1, 2002

1. (Three Times Amended) A nonwoven fabric containing thermoplastic microfibers, said nonwoven fabric comprising:

thermoplastic synthetic fibers being about 5 to about 30 mm long and as fine as about 0.1 to 0.8 d, in about 90 to 10% by weight, mixed and mechanically entangled with pulp fibers being about 2 to 7 mm long, in about 10 to 90% by weight, so as to have a basis weight of about 10 to 80 g/m² as a whole,

said fabric being in the form of a sheet having a plurality of protuberances that project from a surface of the [sheet.] sheet and said thermoplastic synthetic fibers being non-fused throughout said fabric.

9. (Twice Amended) A nonwoven fabric containing thermoplastic microfibers, said nonwoven fabric comprising:

thermoplastic synthetic fibers being about 5 to about 30 mm long and having a fineness of about 01 to 0.8 d, in about 90 to 10% by weight, mixed and mechanically entangled with pulp fibers being about 2 to 7 mm long, in about 10 to 90% by weight, so as to have a basis weight of about 10 to 80 g/m² as a whole,

said fabric being in the form of a sheet having a plurality of protuberances that project from a surface of the sheet, said protuberances having curved [peaks.] peaks, and said thermoplastic synthetic fibers being non-fused throughout said fabric.